

WHAT IS CLAIMED IS:

1. A control apparatus for an automatic transmission for a vehicle, comprising:
a control portion which executes a neutral control in which the control portion places the automatic transmission in a neutral state by reducing an application load on a frictional apply device inside the automatic transmission when the vehicle is stopped,
wherein the control portion ends the neutral control when a torque transmitted to the frictional apply device has been continually equal to, or greater than, a predetermined value for a consecutive predetermined of time.
2. The control apparatus according to claim 1, further comprising:
a transmitted torque estimating portion that estimates the torque transmitted to the frictional apply device based on a rotational speed of a source of driving force and an input rotational speed of the automatic transmission.
3. The control apparatus according to claim 2, further comprising:
a transmitted torque determining portion that determines whether the torque transmitted to the frictional apply device that was estimated by the transmitted torque estimating portion is equal to, or greater than, a predetermined value.
4. The control apparatus according to claim 3, further comprising:
a cumulative time calculating portion that calculates a cumulative time for which the torque transmitted to the frictional apply device was equal to, or greater than, the predetermined value.
5. The control apparatus according to claim 1, further comprising:
a temperature estimating portion that estimates a temperature of the frictional apply device,
wherein the control portion starts the neutral control when the temperature of the

frictional apply device estimated by the temperature estimating portion is less than a predetermined value.

6. The control apparatus according to claim 5, wherein the control portion ends the neutral control when the temperature of the frictional apply device estimated by the temperature estimating portion becomes equal to, or greater than, the predetermined value.

7. The control apparatus according to claim 5, wherein the temperature estimating portion estimates the temperature of the frictional apply device from a predetermined relationship between the rotational speed of the source of driving force, the input rotational speed of the automatic transmission, and a temperature of hydraulic fluid supplied to the automatic transmission.

8. A control method for an automatic transmission for a vehicle, comprising the steps of:

executing a neutral control which includes placing the automatic transmission in a neutral state by reducing an application load on a frictional apply device inside the automatic transmission when the vehicle is stopped; and

ending the neutral control when a torque transmitted to the frictional apply device has been continually equal to, or greater than, a predetermined value for a consecutive predetermined of time.

9. The control method according to claim 8, further comprising the step of:

estimating the torque transmitted to the frictional apply device based on a rotational speed of a source of driving force and an input rotational speed of the automatic transmission.

10. A control method according to claim 9, further comprising the step of:

determining whether the estimated torque transmitted to the frictional apply device is equal to, or greater than, a predetermined value.

11. A control method according to claim 10, further comprising the step of:
calculating a cumulative time for which the torque transmitted to the frictional apply device was equal to, or greater than, the predetermined value.

12. A control method according to claim 8, further comprising the steps of:
estimating a temperature of the frictional apply device; and
starting the neutral control when the estimated temperature of the frictional apply device is less than a predetermined value.

13. A control method according to claim 12, further comprising the step of:
ending the neutral control when the estimated temperature of the frictional apply device becomes equal to, or greater than, the predetermined value.

14. A control method according to claim 12, further comprising the step of:
estimating the temperature of the frictional apply device from a predetermined relationship between the rotational speed of the source of driving force, the input rotational speed of the automatic transmission, and a temperature of hydraulic fluid supplied to the automatic transmission.

15. A control apparatus for an automatic transmission for a vehicle, comprising:
a control means for executing a neutral control in which the control portion places the automatic transmission in a neutral state by reducing an application load on a frictional apply device inside the automatic transmission when the vehicle is stopped,
wherein the control means ends the neutral control when a torque transmitted to the frictional apply device has been continually equal to, or greater than, a predetermined value for a consecutive predetermined of time.